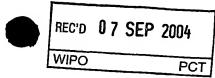
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## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

(Rationalised Report according to the Notice of the President of the EPO published in the OJ11/2001)

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Applicant's or agent's file reference P02033	FOR FURTHER ACTION	ON See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)				
International application No.	International filing date (day	month year)	Priority date (day month year)			
PCT/N002/00332	20/09/2002		03/07/2002			
International Patent Classification (IPC) or	national classification and IPC		:			
	C01B21/28					
Applicant						
NORSK HYDRO ASA et al.						
<ol> <li>This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</li> </ol>						
2. This REPORT consists of a tota	l of sheets, including	ng this cover shee	et.			
This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).						
These annexes consists of a total of	of sheets.					
3. This report contains indications re	lating to the following items:					
I X Basis of the report						
II Priority						
III Non-establishment of o	III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability					
IV Lack of unity of invent	tion					
V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement						
VI Certain documents cite	e <b>d</b>					
VII Certain defects in the i	nternational application					
VIII Certain observations on the international application						
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Date of submission of the demand	Dat	e of completion	of this report			
23/01/2004			). S. U.Y. Wagisches Patentam.			
and the state of t						
Name and mailing address of the IPEA/  European Patent Office	Aut	horized officer				
D-80298 Munich Tel. (+49-89) 2399-0, Tx: 5230 Fax: (+49-89) 2399-4465	656 epmu d	Bernard L	Outis Perit Page Salane apply 0. 83 Perit			
Form PCT/IPEA/409 (cover sheet) P20476	(October 2002) (24/08/20	004)	Office europees			

International application No.

### PCT/NO02/00332

#### I. Basis of the report

1.	IIIVIIal	eport h ion und dments	ier Africie 14 are referted to in thi	i (Replacement sheets which s report as "originally filed" a	have been furnished to the receiving Office in a nd are not annexed to the report since they do a	response to a	
			the international application as originally filed				
		X	the description, pages	1-9	, as originally filed		
			pages		, filed with the demand		
			pages		, filed with the letter of		
		X	the claims, Nos.		, as originally filed		
			Nos.		, as amended under Article 19		
			Nos.		, filed with the demand		
			Nos.	1-11	, filed with the letter of	09/08/04	
		X	the drawings, sheets / fig.	1/2, 2/2	, as originally filed		
			sheets / fig.		, filed with the demand		
			sheets / fig.		, filed with the letter of		
2.	2. The amendments have resulted in the cancellation of:						
			the description, pages:				
			the claims, Nos.				
			the drawings, sheets / fig.				
3.	This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2 (c)).				ered to go		

4. Additional observations, if necessary:

The expression "wave breaker" was objected to as being unclear.

However the change made to the alternative expression "support structure" is regarded as going beyond the original disclosure. The passage on page 4, lines 7-9 generically refers to a specific embodiment as in FIG. IC in which a specific structure is installed to prevent the creation of a trough. The best unit which was constructed is not indicated in claim 1, which only refers to a vague "support structure" without indicating any precise means for achieving the desired result (which is not even indicated). The broadening of the expression originally used to

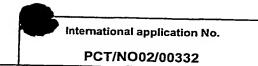
a generic "support structure" is therefore contrary to the requirements of Art. 41(2) PCT.

Consequently, pursuant to Rule 70.2(c), the present report will be established as if the original expression "wave breaker" was still used.

It should be noted, however, that the same objections regarding the clarity would apply to the vague expression "support structure".



III.	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability				
	The questions whether the claimed invention appears to be novel, to involve an applicable have not been examined in respect of:	inventive step (to be non-obvious), or to be industrial			
X	the entire international application,				
	daims Nos.				
beca	ause:				
	the said international application, or the said claims relate to the following subject matter which does not require an international preliminary examination (specify):	Nos.			
X	the description, claims or drawings (indicate particular elements below) or said claims are so unclear that no meaningful opinion could be formed (specify):	Nos.			
	See Box VIII				
<u></u>	the claims, or said claims are so inadequately supported by the description no meaningful opinion could be formed.	Nos.			
	no International search report has been established for said claims	Nos.			



## VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

- The term "wave breaker" has apparently no recognized and immediate meaning in the related art. Any use of this term to define a structure which is not better specified in terms of its position and connections with the other elements is therefore fully unclear.
- 2. It is immediately evident from the description and preferred embodiments that the "wave breaker" must be arranged in a specific area in the system, and cannot be defined in such broad terms as in claim 1 as being "fixed to the metal wall" at a location which may be above the gauzes or below the ceramic fillings in the basket.
- 3. It is unclear where the "bottom plate" should be arranged and which function it should satisfy. Likewise the means defining the zone in which the fillings are maintained should be clearly defined, for example by indicating that said fillings are arranged below the gauzes in a basket delimited by the screen (2) supporting the gauze pack (1), a metal side wall (4) and a perforated bottom plate(5).
- 4. The means ensuring the "wave breaker" effect should be accurately defined as in the description by indicating that they are <u>fixed</u> to the bottom plate(s), as is apparently necessary in any of the <u>disclosed</u> embodiments. No alternative corresponding to the claimed embodiment in claim 1, in which the said means would be fixed <u>only to the wall</u> (a), is disclosed.
- Only specific configurations of the "wave breakers" are disclosed. Any internal element assimilated for example to fillings could however correspond to the claimed definition.
- It is further unclear how an unspecified "wave breaker" may be filled with fillings as in claim 2, especially if said element is a sheet.
- Claims 3 and 4 are also open to the same objection, since the position of the ridge or sheet is fully unclear. This objection obviously applies to claims 5-7.
- 8. The same objection as above further applies to the honeycomb structure of claims 8 and 9.
- 9. The objections raised in connection with the apparatus claims equally apply to the method of claims 10 and 11.

- 10. It would additionally be unclear which difference is to be seen between the unclear "wave breaker" as claimed and similar elements used in the prior art, even if they are not termed "wave breakers". Examples only of said elements are the "support" (11) of WO-A-91/08982, and the anti-vibration element (21) of DE-A-2 754 643.
- 11. The arguments of the applicant are not persuasive for the following reasons:
  - (a) The reasons why the alternative expression "support structure" would still be open to objection as under item 1 above have been indicated.
  - (b) The precise position and connections of the wave breaker are not indicated in claim 1, even if the expression "below the gauzes" has been added. The breaker may thus be located below the bottom plate.
  - (c) The explanations in the reply regarding item 3 are <u>not reflected</u> in claim 1. Use of a clearer definition as suggested for instance in said item 3 appears necessary.
  - (d) The explanations regarding item 4 are also not reflected in claim 1, even if they would apparently confirm the analysis made under item 4.
  - (e) The arguments regarding item 6 are not convincing. Basically the applicant would agree that the filling elements are not located within the wave breaker, but instead in a space (between the breaker and other elements) to be defined in the claims.
  - (f) The remarks about items 7, 8 and 9 are not reflected in the claims.
  - (g) The comments regarding the cited documents have been noted. The differences pointed out in the reply are not reflected in the claims. In addition, reference was made in the first report to element (21) used as anti-vibration support in DE-A-2 754 643.

#### Claims

- A support system for catalyst gauzes in an ammonia oxidation burner, where the
  catalyst gauzes (1) and possibly support screens are being supported by ceramic
  fillings (3) and/or catalyst contained in a burner basket with metal walls (4) and a
  perforated bottom plate (5),
  c h a r a c t e r i z e d i n t h a t a support structure (9, 11) is fixed to the metal wall
  and/or the outer part/periphery of the bottom plate below the gauzes (1).
- A support system according to claim 1,
   c h a racterized in that the support structure is a triangular shaped ridge (11).
- 3. A support system according to claim 1,
  characterized in that the support structure is a smooth or perforated sheet
  (9) arranged at an angle of 10-60° to the wall.
- A support system according to claim 3,
   characterized in that the angle is 25-35°.
- A support system according to claim 2, 3 or 4,
   characterized in that the support structure is made of segments.
- A support system according to claim 5,
   characterized in that the segments have end walls.
- A support system according to claim 1,
   characterized in that the support structure is a honeycomb structure.
- A support system according to claim 7,
   characterized in that the honeycomb structure has a sloping top (8).







- 9. A support system according to any of claims 2-8,
  - characterized in that the support structure is filled with ceramic fillings/ catalyst or similar material to obtain the same flow resistance as the filling material of the bed.
- 10. A method of reducing movement of ceramic material and avoiding tearing of catalyst gauzes in an ammonia oxidation burner where the catalyst gauzes and possibly support screens are being supported by ceramic fillings and possibly a catalyst on a perforated plate or contained in a burner basket with metal walls and perforated bottom plate, c h a r a c t e r i z e d i n t h a t a support structure is fixed to the metal wall and/or the outer part/periphery of the bottom plate of the burner basket below the gauzes and moves the ceramic material together with the metal wall during expansion.
- 11. Method according to claim 10,
  - characterized in that it is used a support structure formed like a triangular shaped ridge, a smooth or perforated sheet or a honeycomb structure.